

10/539627

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SEQUENCE LISTING

5 <110> IPF PharmaCeuticals GmbH

<120> Peptides and their use for the treatment of HIV
infections

<130> 032873wo ME/BM

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15 <150> 02028465.9
<151> 2002-12-19

<160> 88

<170> PatentIn Ver. 2.1

20 <210> 1
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25 <400> 1
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1 5 10 15

30 Pro Phe Val Phe
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45 <223> Xaa is D-proline

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50 Pro Phe Val Phe
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10 <400> 3
Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Val Ala Phe Asn Lys
1 5 10 15

15 Pro Phe Val Phe
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1 5 10 15

30 Pro Phe Val Phe
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1 5 10 15

45 Pro Phe Val Phe
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50 <210> 6
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 1 5 10 15

5 Pro Phe Val Phe
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 1 5 10 15

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 35 <223> Xaa is D-Tic

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 40 <223> Xaa is D-Tic

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50 <210> 9
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1 5 10 15

5 Pro Phe Val Phe
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<210> 10
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1 5 10 15

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1 5 10 15

35 Pro Phe Val Phe
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40 <210> 12
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50 1 5 10 15

Pro Phe Val Phe
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<400> 13

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1 5 10 15

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Pro Phe Val Phe
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<211> 20

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1 5 10 15

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Pro Phe Val Phe
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<210> 15

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<211> 20

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<222> (10)

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1 5 10 15

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Pro Phe Val Phe
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25 <210> 17
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1 5 10 15

40 Pro Phe Val Phe
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45 <210> 18
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<400> 18

Leu Glu Ala Ile Pro Met Ser Ile Pro Xaa Glu Phe Leu Phe Asn Lys
1 5 10 15

5 Pro Phe Val Phe
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10 <210> 19
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15 <220>
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1 5 10 15

25 Pro Phe Val Phe
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30 <210> 20
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35 <220>
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1 5 10 15

45 Pro Phe Val Phe
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50 <210> 21
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55 <220>
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1 5 10 15

5 Asp Phe Val Phe
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.10 <210> 22
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1 5 10 15

25 Pro Phe Val Phe
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30 <210> 23
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35 <220>
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1 5 10 15

45 Pro Phe Val Phe
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50 <210> 24
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<223> Xaa is D-proline

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<223> Xaa is cyclohexylalanine

10 <400> 24
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Pro Phe Val Phe
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20 <210> 25
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<222> (12)
<223> Xaa is 1-naphthylalanine

40 <400> 25
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1 5 10 15
Pro Phe Val Phe
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45 <210> 26
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<222> (12)

<223> Xaa is p-fluorophenylalanine

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5 Leu Glu Ala Ile Pro Met Ser Ile Pro Xaa Glu Xaa Ala Phe Asn Lys
1 5 10 15

Pro Phe Val Phe
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<210> 27

<211> 20

<212> PRT

15 <213> Artificial Sequence

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<223> Xaa is D-proline

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<221> MUTAGEN

<222> (13)

<223> Xaa is 4-pyridylalanine

30 <400> 27

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1 5 10 15

Pro Phe Val Phe
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<210> 28

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40 <212> PRT

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<222> (10)

<223> Xaa is D-proline

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<221> MUTAGEN

<222> (12)

<223> Xaa is 3,3-diphenylalanine

55

<400> 28

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1 5 10 15

Pro Phe Val Phe
20

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1 5 10 15

Pro Phe Val Phe
20

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<223> Xaa is L-Tic

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1 5 10 15

55
Pro Phe Val Phe
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<220>
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15 <222> (13)
<223> Xaa is 3-benzothienylalanine

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1 5 10 15

Pro Phe Val Phe
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25 <210> 32
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1 5 10 15

Pro Phe Val Phe
20

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<210> 33
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5 <223> Xaa ia D-proline

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1 5 10 15
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30 <222> (17)
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35 1 5 10 15
Xaa Phe Val Phe
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40 <210> 35
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5 Xaa Phe Val Phe
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<210> 36

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1 5 10 15

20 Pro Phe Val Phe
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30 <223> Description of Artificial Sequence: VIR-273

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1 5 10 15

Pro Phe Val Phe
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<210> 38

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45 <223> Description of Artificial Sequence: VIR-274

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1 5 10 15

Pro Phe Val Phe
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15 <210> 40

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Pro Phe Val Phe
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Pro Phe Val Phe
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5 Pro Phe Val Phe
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10 <210> 43
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15 <220>
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<400> 43
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Pro Phe Val Phe
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30 <210> 44
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35 <220>
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Pro Phe Val Phe
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55 <210> 45
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10 Pro Phe Val Phe
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15 <210> 46
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Pro Phe Val Phe
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35 <210> 47
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40 <220>
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<210> 48
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15 Pro Phe Val Phe
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20 <210> 49
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25 <220>
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Pro Phe Val Phe
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35 <210> 50
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40 <220>
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Pro Phe Val Phe
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50 <210> 51
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55 <213> Artificial Sequence

<220>
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1 5 10 15
5 Pro Phe Val Phe
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10 <210> 52
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<400> 52
Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Val Gly Phe Gly Lys
25 1 5 10 15
Pro Phe Val Phe
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30 <210> 53
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40 <220>
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<223> Xaa is D-proline

45 <400> 53
Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Val Phe Phe Gly Lys
1 5 10 15
Pro Phe Val Phe
20

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55 <210> 54
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Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Phe Ala Phe Asn Lys
1 5 10 15
10 Pro Phe Val Phe
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15 <210> 55
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20 <220>
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Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Val Phe Phe Asn Lys
30 1 5 10 15
Pro Phe Val Phe
20

35 <210> 56
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40 <220>
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<220>
45 <221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

<400> 56
50 Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Phe Leu Phe Asn Lys
1 5 10 15
Pro Phe Val Phe
20
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<210> 57
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5 <220>
<223> Description of Artificial Sequence: VIR-354

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<222> (10)

10 <223> Xaa is D-proline

<400> 57

Leu Glu Ala Ile Pro Cys Ser Ile Pro Xaa Cys Val Ala Phe Asn Lys
1 5 10 15

15 Pro Phe Val Phe
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20 <210> 58
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30 <223> Xaa is D-proline

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35 1 5 10 15

Pro Phe Val Phe
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40 <210> 59
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45 <220>
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<400> 59

50 Leu Glu Ala Ile Pro Cys Ser Ile Pro Pro Cys Phe Ala Phe Asn Lys
1 5 10 15

Asp Phe Val Phe
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55 <210> 60
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<222> (10)

10 <223> Xaa is D-proline

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15

Pro Phe Val Phe

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<223> Description of Artificial Sequence: VIR-358

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<221> MUTAGEN

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<222> (10)

<223> Xaa is D-proline

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Leu Glu Lys Ile Pro Cys Ser Ile Pro Xaa Cys Val Ala Phe Asn Lys

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1 5 10 15

Pro Phe Val Phe

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<222> (10)

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55 Leu Glu Ala Ile Pro Met Ser Ile Pro Xaa Glu Phe Leu Phe Gly Lys

1 5 10 15

Pro Ala Phe Val Phe

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10 <223> Description of Artificial Sequence: VIR-377

 <220>
 <221> MUTAGEN
 <222> (10)
15 <223> Xaa is D-proline

 <400> 63
 Leu Glu Ala Ile Pro Met Ser Ile Pro Xaa Glu Phe Leu Phe Gly Lys
 1 5 10 15
20 Pro Gly Phe Val Phe
 20

25 <210> 64
 <211> 21
 <212> PRT
 <213> Artificial Sequence

30 <220>
 <223> Description of Artificial Sequence: VIR-380

 <220>
 <221> MUTAGEN
35 <222> (10)
 <223> Xaa is D-proline

 <400> 64
40 Leu Glu Ala Ile Pro Met Ser Ile Pro Xaa Glu Phe Leu Phe Gly Lys
 1 5 10 15

 Pro Phe Phe Val Phe
 20

45 <210> 65
 <211> 21
 <212> PRT
 <213> Artificial Sequence
50 <220>
 <223> Description of Artificial Sequence: VIR-384

 <220>
55 <221> MUTAGEN
 <222> (10)
 <223> Xaa is D-proline

<400> 65

Leu Glu Ala Ile Pro Met Ser Ile Pro Xaa Glu Phe Leu Phe Gly Lys
1 5 10 15

5 Pro Glu Phe Val Phe
20

<210> 66

10 <211> 20

<212> PRT

<213> Artificial Sequence

<220>

15 <223> Description of Artificial Sequence: VIR-396

<220>

<221> MUTAGEN

<222> (10)

20 <223> Xaa is D-proline

<400> 66

Leu Glu Ala Ile Pro Met Ser Ala Pro Xaa Glu Phe Leu Phe Gly Lys
1 5 10 15

25 Pro Phe Val Phe
20

<210> 67

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

35 <223> Description of Artificial Sequence: VIR-400

<220>

<221> MUTAGEN

40 <222> (10)

<223> Xaa is D-proline

<400> 67

45 Leu Glu Ala Ile Pro Met Ser Phe Pro Xaa Glu Phe Leu Phe Gly Lys
1 5 10 15

Pro Phe Val Phe
20

50

<210> 68

<211> 20

<212> PRT

<213> Artificial Sequence

55

<220>

<223> Description of Artificial Sequence: VIR-416

<220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline
5
<400> 68
Leu Glu Ala Ile Pro Met Gly Ile Pro Xaa Glu Phe Leu Phe Gly Lys
1 5 10 15
10 Pro Phe Val Phe
20
15 <210> 69
<211> 20
<212> PRT
<213> Artificial Sequence
20 <220>
<223> Description of Artificial Sequence: VIR-418
25 <220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline
30 <400> 69
Leu Glu Lys Ile Pro Met Gly Ile Pro Xaa Glu Phe Leu Phe Gly Lys
1 5 10 15
30 Pro Phe Val Phe
20
35 <210> 70
<211> 21
<212> PRT
<213> Artificial Sequence
40 <220>
<223> Description of Artificial Sequence: VIR-445
45 <220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline
50 <220>
<221> MUTAGEN
<222> (13)
<223> Xaa is D-Tic
55 <400> 70
Leu Glu Ala Ile Pro Ile Ser Ile Pro Xaa Pro Glu Val Xaa Phe Asn
1 5 10 15
Lys Pro Phe Val Phe
20

<210> 71
<211> 20
5 <212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-447
10
<220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline
15
<220>
<221> MUTAGEN
<222> (17)
<223> Xaa is L-Tic
20
<400> 71
Leu Glu Ala Ile Pro Ile Ser Ile Pro Xaa Glu Val Ala Phe Asn Lys
1 5 10 15
25 Xaa Phe Val Phe
20

<210> 72
30 <211> 20
<212> PRT
<213> Artificial Sequence

<220>
35 <223> Description of Artificial Sequence: VIR-448

<220>
<221> MUTAGEN
<222> (10)
40 <223> Xaa is D-proline

<220>
<221> MUTAGEN
<222> (13)
45 <223> Xaa is D-Tic

<400> 72
Leu Glu Ala Ile Pro Met Gly Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15
50 Pro Phe Val Phe
20

55 <210> 73
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-449

5 <220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

10 <220>
<221> MUTAGEN
<222> (13)
<223> Xaa is L-Tic

15 <400> 73
Leu Glu Ala Ile Pro Met Gly Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15
Pro Phe Val Phe
20 20

<210> 74
<211> 20
25 <212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-452

30 <220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

35 <220>
<221> MUTAGEN
<222> (13)
<223> Xaa is L-Tic

40 <400> 74
Leu Glu Asp Ile Pro Met Ser Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15
Pro Phe Val Phe
45 20

<210> 75
50 <211> 20
<212> PRT
<213> Artificial Sequence

<220>
55 <223> Description of Artificial Sequence: VIR-454

<220>
<221> MUTAGEN

<222> (10)
<223> Xaa is D-proline

5 <220>
<221> MUTAGEN
<222> (13)
<223> Xaa is D-Tic

10 <400> 75
Leu Glu Lys Ile Pro Met Ser Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15

Pro Phe Val Phe
20

15

<210> 76
<211> 20
<212> PRT
20 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-455

25 <220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

30 <220>
<221> MUTAGEN
<222> (13)
<223> Xaa is L-Tic

35 <400> 76
Leu Glu Lys Ile Pro Met Ser Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15

Pro Phe Val Phe
20

40

<210> 77
<211> 20
45 <212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-479

50 <220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

55 <400> 77
Leu Glu Asp Ile Pro Ile Gly Ile Pro Xaa Glu Phe Leu Phe Asn Lys
1 5 10 15

Pro Phe Val Phe
20

5
<210> 78
<211> 20
<212> PRT
<213> Artificial Sequence

10
<220>
<223> Description of Artificial Sequence: VIR-483

15
<220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

20
<220>
<221> MUTAGEN
<222> (13)
<223> Xaa is D-Tic

25
<400> 78
Leu Glu Lys Ile Pro Ile Gly Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15

Pro Phe Val Phe
20

30
<210> 79
<211> 20
<212> PRT
<213> Artificial Sequence

35
<220>
<223> Description of Artificial Sequence: VIR-484

40
<220>
<221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

45
<220>
<221> MUTAGEN
<222> (13)
<223> Xaa is L-Tic

50
<400> 79
Leu Glu Lys Ile Pro Ile Gly Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15

55
Pro Phe Val Phe
20

<210> 80

<211> 20
<212> PRT
<213> Artificial Sequence

5 <220>
<223> Description of Artificial Sequence: VIR-485

<220>
<221> MUTAGEN
10 <222> (10)
<223> Xaa is D-proline

<220>
<221> MUTAGEN
15 <222> (17)
<223> Xaa is L-Tic

<400> 80
Leu Glu Lys Ile Pro Ile Gly Ile Pro Xaa Glu Val Ala Phe Asn Lys
20 1 5 10 15

Xaa Phe Val Phe
20

25 <210> 81
<211> 20
<212> PRT
<213> Artificial Sequence

30 <220>
<223> Description of Artificial Sequence: VIR-487

<220>
35 <221> MUTAGEN
<222> (10)
<223> Xaa is D-proline

<220>
40 <221> MUTAGEN
<222> (13)
<223> Xaa is L-Tic

<400> 81
45 Leu Glu Asp Ile Pro Ile Gly Ile Pro Xaa Glu Val Xaa Phe Asn Lys
1 5 10 15

Pro Phe Val Phe
20

50 <210> 82
<211> 20
<212> PRT
55 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-488

<220>
<221> MUTAGEN
<222> (10)
5 <223> Xaa is D-proline

<220>
<221> MUTAGEN
<222> (17)
10 <223> Xaa is L-Tic

<400> 82
Leu Glu Asp Ile Pro Ile Gly Ile Pro Xaa Glu Val Ala Phe Asn Lys
1 5 10 15
15 Xaa Phe Val Phe
20

20 <210> 83
<211> 20
<212> PRT
<213> Artificial Sequence

25 <220>
<223> Description of Artificial Sequence: VIR-512

<220>
<221> MUTAGEN
30 <222> (1)
<223> Xaa is N-methyl-leucine

<400> 83
Xaa Glu Ala Ile Pro Met Ser Ile Pro Pro Glu Phe Leu Phe Gly Lys
35 1 5 10 15
Pro Phe Val Phe
20

40 <210> 84
<211> 20
<212> PRT
<213> Artificial Sequence

45 <220>
<223> Description of Artificial Sequence: VIR-568

<400> 84
50 Leu Glu Ala Ile Pro Met Ser Cys Pro Pro Glu Phe Cys Phe Gly Lys
1 5 10 15
Pro Phe Val Phe
20

55 <210> 85
<211> 20

<212> PRT
<213> Artificial Sequence

<220>
5 <223> Description of Artificial Sequence: VIR-570

<400> 85
Leu Glu Ala Ile Pro Cys Ser Ile Pro Pro Glu Cys Leu Phe Gly Lys
1 5 10 15
10 Pro Phe Val Phe
20

15 <210> 86
<211> 20
<212> PRT
<213> Artificial Sequence

20 <220>
<223> Description of Artificial Sequence: VIR-576

<220>
<221> DISULFID
25 <222> (6)
<223> An intermolecular disulfide bridge forms between
the cysteine residues of two VIR-576, giving rise
to a homo-dimer.

30 <400> 86
Leu Glu Ala Ile Pro Cys Ser Ile Pro Pro Glu Phe Leu Phe Gly Lys
1 5 10 15
35 Pro Phe Val Phe
20

<210> 87
<211> 20
40 <212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: VIR-580

45 <220>
<221> BINDING
<222> (20)
<223> Mini-PEG rest is bound to phenylalanine; Mini-PEG
50 =
-NH-(CH₂)₂-O-(CH₂)₂-O-CH₂-CO-NH-(CH₂)₂-O-(CH₂)₂-O-
CH₂-CO-NH₂

<400> 87
55 Leu Glu Ala Ile Pro Met Ser Ile Pro Pro Glu Phe Leu Phe Gly Lys
1 5 10 15
Pro Phe Val Phe

20

5 <210> 88
<211> 20
<212> PRT
<213> Artificial Sequence

10 <220>
<223> Description of Artificial Sequence: VIR-590

<400> 88
Leu Glu Ala Ile Pro Met Lys Ile Pro Pro Glu Phe Leu Phe Gly Lys
1 5 10 15
15 Pro Phe Val Phe
20

20